

Appendix 11B-1 SWM Design Checklist

1. **TYPE OF BMP-QUALITY CONTROL** – Determine the type of BMP to be used from Table 11-1. Find the new percent impervious area within the project area (right of way and permanent easements) per outfall.
2. **WATER QUANTITY CONTROL** – Check for an adequate receiving channel in accordance with MS-19 of the erosion and sediment control regulations. If the receiving channel is not adequate, the BMP must provide attenuation of the post-development peak discharge to pre-development discharge levels.
 - Natural Channels: Q_2 for discharge and velocity
 - Man-made Channels: Q_2 for velocity and Q_{10} for discharge
 - Storm Drainage Systems: Q_{10} for capacity
3. **WATER QUANTITY CONTROL (ALTERNATIVE)** – Control of the runoff from the 1-year frequency storm, in lieu of the 2- and 10-year frequency storms, may be required if:
 - A field survey of the receiving channel indicates that significant erosion is occurring under existing conditions
 - It is anticipated that erosion may occur in the receiving channel due to increased frequency of bankful flow conditions as a result of standard peak flow attenuation

If attenuation of the 1-year frequency storm is required, the volume requirements are based upon containing the entire volume of runoff from the 1-year frequency event for a period of 24-hours.
4. **WATER QUALITY CONTROL** – Determine the required water quality volume (WQV) using Table 11-1 and compute the volume requirements.
5. **TEMPORARY SEDIMENT STORAGE** – If the BMP is to be used as a temporary sediment basin during construction, calculate the volume requirements:
 - Wet Storage – 67 cu. yds. per acre of the total contributing drainage area plus
 - Dry Storage – 67 cu. yds. per acre of the total contributing drainage area

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6. **FOREBAY** – If the BMP is to have a sediment/debris forebay, calculate the volume requirements. Forebays are recommended for most types of basins.

7. **OTHER DESIGN CONSIDERATIONS**
 - Use “Design Guidelines for SWM Basins”
 - Use “Details for Design of Dams”
 - Use “Perimeter Control Guidelines”
 - Design of the emergency spillway for conveying Q_{100}
 - Request foundation information for basin and dam
 - Request aquatic planting plan from the Environmental Division (when required)
 - Provide maintenance access with turnaround (include chain barricade when required)
 - Provide sufficient right-of-way and easement for construction and maintenance
 - Provide information for Stormwater Management Data Base (complete the “SWM Facility – Tabulation Sheet” provided in Appendix 11E-1)